

Applicants did not discover compounds that inhibit telomerase. In fact, applicants made very clear that many compounds that inhibit telomerase were known, through the work of others, prior to applicants' work. Specifically, beginning on page 3, line 26 of the specification, applicants said:

Examples of inhibitors of telomerase include a class of quinone antibiotics, rubromycins and purpuromycins and their analogs (Ueno et al. Biochemistry 39: 5995-6002, 2000); 3'-deoxy-2:3'-didehydrothymidine, dideoxyinosine (Beltz et al. Anticancer Res. 19: 3205-3211, 1999); the oligonucleotide sequence that mimics telomeric DNA (TTAGGG)3 (Glukhov et al. Biochem. Biophys. Res. Comm. 248: 368-371, 1998); levofloxacin and ofloxacin (Yamakuchi et al. Cancer Lett. 119: 213-219, 1997); carbovir, azidothymidine (AZT) (Yegorov et al. Biochemistry 62: 1296-1305, 1997); antisense nucleotides against c-myc mRNA including ACGTTGAGGGGCATC (Kohtaro and Takahashi, Biochem. Biophys. Res. Comm. 241: 775-781, 1997); isothiazolone derivatives such as 2-[3-(trifluoromethyl)phenyl]isothiazolin-3-one (Hayakawa et al. Biochemistry 38: 11501-11507, 1999); ursodeoxycholic acid (Narisawa et al. J. Exp. Clin. Cancer Res. 18: 259-266, 1999); diazaphilonic acid (Tabata et al. J. Antibiot. 52: 412-414, 1999); the fungal metabolite, alterperylene (Togashi et al. Oncol. Res. 10: 449-453, 1998); regioisomeric difunctionalized amidoanthracene-9,10-diones substituted at the 1,5-, 1,8-, and 2,7-positions (Perry et al. J. Med. Chem. 41: 4873-4884, 1998); 5-azacytidine (Kitagawa et al. Clin. Cancer Res. 6: 2868-2875, 2000); 3,4,9,10-perylenetetracarboxylic diimide-based ligands (Fedoroff et al., Biochem. 37: 12367-12374, 1998); 10H-indolo[3,2-b]quinoline (Caprio et al. Bioorg. Med. Chem. Lett. 10: 2063-2066, 2000); 2'-O-MeRNA telomerase oligomers, 2'-O-alkylRNA telomerase oligomers, fomivirsen (Herbert et al. Proced. Natl. Acad. Sci. USA 96: 14276-14281, 1999); cationic porphyrins (Wheelhouse et al. J. Am. Chem Soc. 120: 3261-3262, 1998); diazaphilonic acid (Tabata et al. J. Antibiot. 52: 412-412, 1999); telomerase inhibitor I (2,6-bis[3-(2-hydroxymethyl)-N-methylpiperidino]propionamido]-anthracene-9,10-dione, diiodide) (Sun et al. J. Med Chem. 40: 2113, 1997); telomerase inhibitor II (5'-d(ATGAAATCAGGGTTAGG)-3') (Blasco, M.A., Science 269: 1267, 1995); telomerase inhibitor III (5'-d(TTAGGG)-3') (Mata et al., Toxicol. Appl. Pharmacol. 144: 189, 1997); telomerase inhibitor IV (PIPER or N,N'-bis[2-(1-piperidino)ethyl]-3,4,9,10-perylenetetracarboxylic diimide) (Han et al. Biochemistry 38: 6981, 1999); telomerase inhibitor V (BSU-1051 or 2,6-bis[3-(N-piperidino)propionamido]anthracene-9,10-dione) (Perry et al. J. Med Chem. 41: 3253, 1998); telomerase inhibitor VI (5'-CAGUUAGGGUUAG-3') (Herbert et al. Proc. Natl. Acad. Sci. USA 96: 14276, 1999); telomerase inhibitor VII (5'-d(GGG~GGG)-3') (Page et al. Exp. Cell Res. 252: 41, 1999); telomerase inhibitor VIII (3,6-bis(3-piperidinopropionamido)-acridine) (Harrison et al. Bioorg. Med Chem. Lett. 9: 2463, 1999); and TMPyP4 (meso-5,10,15,20-tetrakis-(N-methyl-4-pyridyl)porphine) (Izbicka et al. Cancer Res. 59: 639, 1999).